

1 **WHAT IS CLAIMED IS:**

2 1. A process comprising:

3 adding peroxide degradable polymers to a wellbore fluid;

4 adding a peroxide source to a wellbore fluid;

5 pumping said wellbore fluids into the wellbore; and

6 changing the pH of the fluid in the wellbore using a substantial portion of fluids

7 produced from subterranean formations so as to activate the peroxide source.

8 2. The process of Claim 1 wherein the peroxide degradable polymer comprises a
9 polysaccharide.

10 3. The process of Claim 1 wherein the encapsulated peroxide source comprises an
11 inorganic peroxide.

12 4. The process of Claim 3 wherein the inorganic peroxide is selected from a zinc
13 peroxide, alkaline earth metal peroxides, and combinations thereof.

14 5. The process of Claim 4 wherein the alkaline earth metal peroxide comprises
15 magnesium peroxide.

16 6. The process of Claim 1 wherein the inorganic peroxide source is encapsulated.

17 7. The process of Claim 6 wherein the encapsulating material is substantially
18 insoluble in wellbore fluids having a pH value greater than about 7.5.

19 8. The process of Claim 7 wherein the encapsulating material comprises a film-
20 forming polymer.

21 9. The process of Claim 8 wherein the film-forming polymer comprises an enteric
22 polymer.

23 10. The process of Claim 9 wherein the enteric polymer comprises a copolymer of
24 acrylic acid compounds and acrylate compounds.

25 11. The process of Claim 9 wherein the enteric polymer comprises a copolymer of a
26 mixture of monomers selected from acrylic acid, acrylamide, methacrylic acid,
27 ethylacrylate, methyl methacrylate, and combinations thereof.

28 12. A process for degrading polysaccharide polymers contained in a filter-cake located
29 in functional proximity to the surface of a subterranean rock formation penetrated
30 by a well, the process comprising:

1 suspending a metal peroxide in a polysaccharide-containing wellbore fluid,
2 wherein the wellbore fluid has a pH value greater than about 7.5,
3 pumping the wellbore fluid into the well,
4 allowing some filtration of the fluid into a subterranean rock formation to produce
5 a filter cake, wherein the filter cake contains the alkaline earth metal or zinc
6 peroxide, polysaccharides, and any materials that may have been suspended in the
7 wellbore fluid,
8 bringing the well into production of a subterranean rock formation fluid, wherein
9 the formation fluid exhibits a pH of less than about 7.0,
10 allowing the formation fluids to contact the filter cake so as to lower the pH value
11 of the filter cake, and

12 allowing the metal peroxide in the filter cake to activate at the lower pH and
13 degrade the polysaccharide components, thereby causing the filter cake to weaken and/or
14 increase in permeability, so as to increase production rates.

15 13. The process of Claim 12 wherein the metal peroxide is encapsulated.

16 14. The process of Claim 13 wherein the encapsulating material is substantially
17 insoluble in wellbore fluids having a pH value of at least about 7.5.

18 15. The process of Claim 14 wherein the encapsulating material comprises a film-
19 forming polymer.

20 16. The process of Claim 15 wherein the film-forming polymer comprises an enteric
21 polymer.

22 17. The process of Claim 16 wherein the enteric polymer comprises a copolymer of
23 acrylic acid compounds and acrylate compounds.

24 18. The process of Claim 16 wherein the enteric polymer comprises a copolymer of a
25 mixture of monomers selected from acrylic acid, acrylamide, methacrylic acid,
26 ethylacrylate, methyl methacrylate, and combinations thereof.

27 19. A wellbore fluid comprising a peroxide degradable polymer and an encapsulated
28 peroxide source.

29 20. The wellbore fluid of Claim 19 wherein the peroxide degradable polymer
30 comprises a polysaccharide.

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- 1 21. The wellbore fluid of Claim 19 wherein the encapsulating material is substantially
2 insoluble in wellbore fluids having a pH value greater than about 7.5.
- 3 22. The wellbore fluid of Claim 19 wherein the encapsulating material comprises a
4 film-forming polymer.
- 5 23. The wellbore fluid of Claim 22 wherein the film-forming polymer comprises an
6 enteric polymer.
- 7 24. The wellbore fluid of Claim 23 wherein the enteric polymer comprises a
8 copolymer of acrylic acid compounds and acrylate compounds.
- 9 25. The wellbore fluid of Claim 23 wherein the enteric polymer comprises a
10 copolymer of a mixture of monomers selected from acrylic acid, acrylamide, methacrylic
11 acid, ethylacrylate, methyl methacrylate, and combinations thereof.
- 12 26. The wellbore fluid of Claim 19 wherein the peroxide source comprises an
13 inorganic peroxide compound.
- 14 27. The wellbore fluid of Claim 26 wherein the inorganic peroxide is selected from a
15 zinc peroxide, alkaline earth metal peroxides, and combinations thereof.
- 16 28. The wellbore fluid of Claim 27 wherein the alkaline earth metal peroxide
17 comprises magnesium peroxide.
- 18 29. The wellbore fluid of Claim 16 wherein the peroxide source is selected from a
19 zinc peroxide, alkaline earth metal peroxides, and combinations thereof.
- 20 30. The wellbore fluid of Claim 29 wherein the alkaline earth metal peroxide
21 comprises magnesium peroxide.
- 22 31. A method of using a change in the pH value of a down hole environment to
23 control the release of peroxide in said down hole environment using produced fluids to
24 effect said change in pH value.
- 25 32. The method of Claim 31 wherein the peroxide is provided to the down hole
26 environment in a wellbore fluid.
- 27 33. The method of Claim 32 wherein the wellbore fluid further comprises a peroxide
28 degradable polymer.
- 29 34. The method of Claim 31 wherein the wellbore fluid comprises the wellbore fluid
30 of Claim 19.

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- 1 35. The method of Claim 31 wherein the wellbore fluid comprises the wellbore fluid
2 of Claim 29.
- 3 36. The method of Claim 31 wherein the change in pH is effected by using the
4 produced fluids to lower the pH of a wellbore fluid.
- 5 37. The method of Claim 31 wherein the source of the peroxide comprises an
6 inorganic peroxide source.
- 7 38. The method of Claim 37 wherein the inorganic peroxide is selected from a zinc
8 peroxide, alkaline earth metal peroxides, and combinations thereof.
- 9 39. The method of Claim 38 wherein the alkaline earth metal peroxide comprises
10 magnesium peroxide.
- 11 40. The method of Claim 31 wherein the peroxide comprises an encapsulated
12 peroxide source.
- 13 41. The method of Claim 40 wherein the encapsulating material is substantially
14 insoluble in wellbore fluids having a pH value greater than about 7.5.
- 15 42. The method of Claim 41 wherein the encapsulating material comprises a polymer.
- 16 43. The method of Claim 42 wherein the polymer comprises a film-forming polymer.
- 17 44. The method of Claim 43 wherein the film-forming polymer comprises an enteric
18 polymer.
- 19 45. The method of Claim 44 wherein the enteric polymer comprises a copolymer of
20 acrylic acid compounds and acrylate compounds.
- 21 46. The method of Claim 44 wherein the enteric polymer comprises a copolymer of a
22 mixture of monomers selected from acrylic acid, acrylamide, methacrylic acid,
23 ethylacrylate, methyl methacrylate, and combinations thereof.
- 24 47. The method of Claim 44 wherein the encapsulated peroxide source comprises an
25 inorganic peroxide source.
- 26 48. The method of Claim 47 wherein the inorganic peroxide source is selected from a
27 zinc peroxide, alkaline earth metal peroxides, and combinations thereof.
- 28 49. The method of Claim 48 wherein the alkaline earth metal peroxide comprises
29 magnesium peroxide.